A Drinking Water Strategy for Nova Scotia

Final Report

NOVA SCOTIA

Environment and Labour

Office of the Deputy Minister

To: Kerry Morash, Minister of Environment and Labour

From: Bill Lahey, Chair of the Interdepartmental Drinking Water Management Committee

Date: September 8, 2005

Reference: Completion of Action Plan Deliverables in the Drinking Water Strategy

It is my pleasure to report, on behalf of the Interdepartmental Drinking Water Management Committee, that all of the action items outlined in Nova Scotia's Drinking Water Strategy have been completed. We will continue to be guided by the strategy to build on our accomplishments.

The strategy recognizes the need for co-operation among all stakeholders so that we may achieve our common goal of delivering clean, safe drinking water to all Nova Scotians. It is important for our provincial government to continue its leadership in conserving and protecting water resources.

Therefore, the Interdepartmental Drinking Water Management Committee was established to oversee the implementation of the strategy, which was released in October 2002.

The committee's membership includes senior managers from several provincial departments. It is responsible for government-wide coordination of activities and partnerships to support the strategy.

Strategy Accomplishments

Over the past three years, all actions have been accomplished, including operator training, updating of watershed protection plans, and the development of a compliance monitoring program.

I would particularly like to highlight the following three accomplishments, because they go a long way to protecting the public health of Nova Scotians:

- **All municipal water utilities have consistent approvals that require them to meet clear standards for water treatment and operator certification.**

  The need for consistent, province-wide approvals was a recommendation in both the Walkerton and North Battleford inquiries. All municipal utilities were issued consistent, province-wide approvals in the spring of 2003 that require them to meet provincial and industry standards for providing safe, clean drinking water. Municipalities have until 2008 to meet the standards contained in these approvals. Since the release of the strategy, Environment and Labour has received many positive comments from elected officials, municipal administrators, health representatives, and Nova Scotians assuring us that the safety of drinking water is, indeed, a high priority.

- **About 1,800 small public drinking water supplies have been registered with Environment and Labour.**

  These supplies are required to regularly monitor their drinking water quality and to immediately notify the department if coliform bacteria are present or another health-related guideline is exceeded. Owners of these supplies must then take corrective action to remediate the problem. Environment and Labour will continue to work with the departments of Health and Agriculture and Fisheries to ensure that these supplies are adequately regulated. Work is also under way to examine requirements for drinking water supplies that do not currently require an approval or registration.

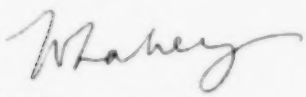
- **Several education documents have been prepared to help private well owners understand their role in protecting and testing their water.**

  With 40 per cent of Nova Scotia's population on private water supplies, it is important that these be adequately managed for public health protection. Owners of private supplies need to be made aware that they are responsible for testing and treating their water. The publications will help raise their level of awareness.

In addition to these accomplishments, we are continuing to focus on other commitments in the strategy including a renewal process for operator certification.

The attached table summarizes the strategy deliverables and the actions taken.

Respectfully submitted by,



William Lahey, Chair

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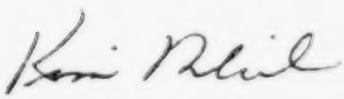

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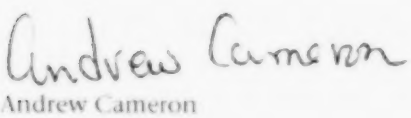

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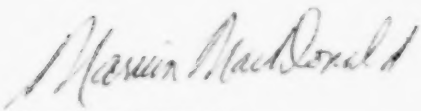

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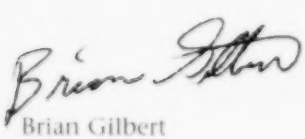

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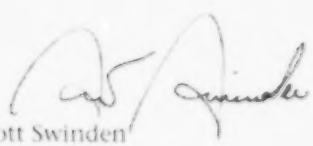

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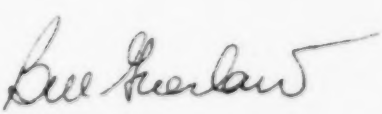

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Drinking Water Strategy Deliverables and Actions Taken

Time Frame	Deliverables	Actions
Fall 2002	Roll out Drinking Water Strategy to municipalities and other stakeholders.	Presentations on the Drinking Water Strategy, the Municipal Water Approvals Renewal Initiative, and source water protection were given to municipal stakeholder groups and other stakeholders in October/November 2002. An article was also included in the fall issue of the UNSM Newsletter to advise all municipalities of the Drinking Water Strategy and Municipal Water Approvals Renewal Initiative.
	Initiate assessment of all municipal drinking water supply area protection plans.	In the fall of 2002, planning assistance programs were under way or complete for 14 municipal drinking water supply areas. Protected Water Area Designations were under review or in preparation for 10 municipal drinking water supply areas.
	Initiate a review of facility classification requirements for all water treatment facilities.	Review was completed, and staff assisted two municipalities develop plans to achieve requirements.
	Complete the registration process for small public water systems.	The registration process was concluded in the fall of 2002. There are approximately 1,800 registered supplies in Nova Scotia. Forty-two per cent are in the Western region. The remainder are in Northern (22 per cent), Central (20 per cent), and Eastern (16 per cent) regions.
	Advise municipalities of the Municipal Water Approvals Renewal initiative.	Presentations advising municipal stakeholders of this initiative were given in October/November 2002. A formal letter advising municipalities of the process, complete with guidance documents, was hand-delivered to municipalities in December 2002.
Winter 2003	Initiate a voluntary process optimization program for water treatment facilities to improve treatment plant operation and performance.	Several optimization programs were identified and assessed. Based on this review, the International Water Treatment Alliance (IWTA) was considered the most suitable for "process" optimization and the most cost-effective. Three utilities are currently using the program—Bridgewater, New Glasgow, and Windsor.

Time Frame	Deliverables	Actions
	Develop a handbook and orientation program for municipal councillors and public utilities who oversee the management of the water utility, including operators.	A draft handbook was prepared and circulated for review and comment by winter 2003. The handbook was publicly released in July 2004.
	Develop and implement standard enforcement and reporting protocols.	An "Inspection and Compliance Model" was developed.
	Develop additional public outreach information and materials for private well owners.	The following material was published: • Fact Sheets: "Water, A Natural Recycler," "Become a Water Steward in Your Community," "Water Conservation." • "Before You Construct A Water Well—Facts a homeowner should know" (8th edition). In addition to the above, a course on well water management for realtors was developed.
Spring 2003	Prioritize municipal drinking water supply areas requiring protection plans.	Staff prioritized municipal drinking water supply areas based on preliminary information. The committee requested that additional factors be considered in the evaluation. This was completed and discussed as part of the summer 2003 activities.
	Identify operator training needs.	Staff prepared a curriculum for operator training and worked with Dalhousie University to deliver the program. Staff also assisted other training providers.
	Work with municipalities to have System Assessment Reports submitted by April 1, 2004.	Draft terms of reference were developed and presented to municipalities. Presentations were given at the UNSM Spring Workshop and SNSMR Workshops, including clarification on report requirements. Information about funding assistance for the System Assessment Reports ($500,000 through SNSMR) and source water protection planning ($150,000 through SNSMR) was also provided. Staff also met with the Municipal Public Works Association of Nova Scotia Stakeholder Committee and provided additional clarification on requirements. Staff continued to address inquiries throughout the year. Training sessions were held in April 2004 to assist regional engineers evaluate the reports.

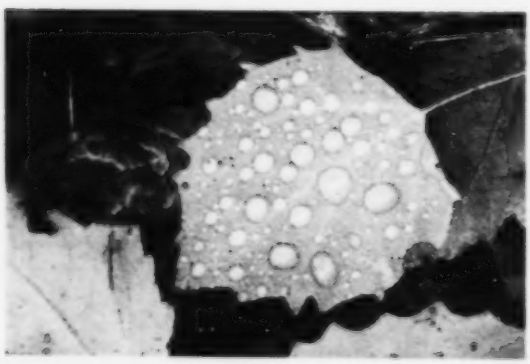
Time Frame	Deliverables	Actions
Summer 2003	Work with municipalities to begin updating/ developing new protection plans for priority water areas.	Staff revised the preliminary analysis prioritizing municipal drinking water supply areas requiring protection based on the committee's input. Guidance documents were drafted to assist municipalities prepare a source water protection plan. These were publicly released in July 2004. Copies were mailed directly to municipal water utilities. SNSMR also mailed copies directly to municipal planners.
Fall 2003	Develop a program for compliance monitoring of public drinking water systems.	a. Municipal Water Systems – Municipal water systems have been issued new approvals that require a sampling plan for all health-related drinking water quality parameters based on the vulnerability of the source to contamination (e.g., risk-based monitoring). The sampling plan is to be reviewed annually and modified accordingly based on water quality results and/or if conditions change in the source water area. b. Registered Water Systems – A "risk assessment evaluation form" was completed for all registered water systems. The risk-based compliance monitoring program will be in accordance with the "Inspection and Compliance Model" (i.e., high risk is audited twice a year, medium risk once per year, and low risk once every two years).
	Facilitate necessary operator training.	Staff facilitated the following operator training. Numbers in brackets indicate the number of attendees: • November 10, 2002: Chlorination Workshop (10)* • December 5, 2002: Chlorination Workshop (40)* • May 5–6, 2003: Water Treatment Operations, Part 1 (26)** • May 13, 2003: Watermain Disinfection (25)* • June 2–4, 2003: Water Treatment Operations, Part 2 (26)** • September 24, 2003: Water Testing (42)* • October 22, 2003: Watermain Disinfection (32)* • October 27–29, 2003: Water Treatment Operations, Part 3 (14)** • November 17-18, 2003: Water Treatment Operations, Part 1 (9)** • December 8–10, 2003: Water Treatment Operations, Part 2 (9)** * Offered through the Atlantic Canada Water Works Association ** Offered through Dalhousie University Staff also participated in the Water and Wastewater Management Strategies Forum, which was held on July 15–16, 2003 in Halifax. Twenty-two individuals attended this conference.

Time Frame	Deliverables	Actions

Winter 2004	Develop additional public outreach information for municipal and small public drinking water systems.	The following material was published:
		• Guide for Private Well Owners
		• The Source Water Protection Primer (Published by Pollution Probe with funding support from Nova Scotia Environment and Labour)
		• Water Withdrawal Approvals: Application Requirements
		• Developing a Municipal Source Water Protection Plan:
		  • A Guide for Water Utilities and Municipalities
		  • Step 1: Form a Source Water Protection Advisory Committee
		  • Step 2: Delineate a Source Water Protection Area Boundary
		  • Step 3: Identify Potential Contaminants and Assess Risk
		  • Step 4: Develop a Source Water Protection Management Plan
		  • Step 5: Develop a Monitoring Program to Evaluate the Effectiveness of a Source Water Protection Plan
		
		In addition to the above written material, staff facilitated or provided assistance with the following training sessions (numbers in brackets indicates number of attendees):
		
		• March 1–3, 2004: Water Treatment Facility Management (21)**
		• May 27, 2004: Watermain Disinfection (20)*
		• May 31–June 2, 2004: Water Treatment Fundamentals (8)**
		
		* Offered through the Atlantic Canada Water Works Association
		** Offered through Dalhousie University

Time Frame	Deliverables	Actions
Spring 2004	Work with municipalities and industry to research and develop municipal land use controls and best management practices (BMPs) for land uses of concern to protect water supply areas.	Staff have developed a BMPs binder. Staff are working with municipalities to assist them with the preparation of source water protection plans, including the use of BMPs where appropriate.
	Receive System Assessment Reports from municipal water systems.	System Assessment Reports have been received from all municipal units. The submission of the System Assessment Reports is the first important milestone toward ensuring that municipal water supplies are on target with Nova Scotia's Drinking Water Strategy. Most municipalities were able to defray their expenses by applying for funding that was made available by Service Nova Scotia and Municipal Relations. The next step is for each municipality to complete a plan for how they will address any deficiencies identified in the report.
Summer 2004	Conduct review of the voluntary optimization program for water treatment facilities to improve treatment plant performance.	The International Water Treatment Alliance (IWTA) was selected as the facility optimization program to be pilot-tested in Nova Scotia by three utilities. Due to the self-paced nature of the program, the facilities are at various stages of the program. An article on the program was submitted to the Atlantic Canada Water Works Association newsletter to encourage other utilities to participate.
Fall 2004	Implement a program for compliance monitoring of public drinking water systems.	Municipal water supplies are audited twice per year, and registered water supplies are audited according to the risk model. In the order of 1,500 audits are required for the drinking water program on an annual basis using the audit frequency established by the existing risk model. Revisions to the risk model may be necessary if resources are an issue.
	Ensure that certification and qualification of water treatment facility operators are in place to meet regulatory requirements.	A review of facilities was conducted. Staff are working with three municipalities to develop plans to achieve requirements.

Time Frame	Deliverables	Actions
Winter 2005	Develop additional public outreach information and materials for private well owners.	Materials published include the following: • Arsenic in Drinking Water—Health Canada's guidelines released for public consultation • Boil Water Fact Sheet • Well Disinfection Procedures (updated) • Ultraviolet (UV) Disinfection for Drinking Water In addition, three articles were submitted to the Nova Scotia Groundwater Association to apprise well drillers/diggers, pump installers, and water treatment specialists of the following: • Health Canada's arsenic guidelines out for public consultation • UV disinfection is an acceptable option for treating water wells that have persistent microbiological contamination • World Health Organization guidelines for drinking water were revised and publicly released. The Well Logs Database was also publicly released in January 2005.
Spring 2005	Work with municipalities to have comprehensive water supply protection strategies in progress for all water supply areas.	Staff continue to work with municipalities to develop source water protection plans as part of the Municipal Water Approvals Renewal Initiative. Municipalities are required to submit an implementation schedule as part of the plan.
	Work with municipalities to have comprehensive treatment and operational strategies in place for all municipal water supplies.	Staff continue to work with municipalities to have comprehensive treatment and operational strategies in place for all municipal water supplies. Municipalities have until 2008 to phase in requirements.



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